VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Claims 18-20, 23, and 40 have been canceled.

Claims 21-22, 24, 27-30, 32 and 37 have been amended and new claims 41-68 added as follows:

21. (Amended) The method of claim ~~20~~ 43 wherein the first and second cancer-specific nucleic acids are the same.

22. (Amended) The method of claim ~~20~~ 43 wherein the first and second cancer-specific nucleic acids are different.

24. (Amended) The method of any one of claims ~~23~~ 55-57 wherein the RNA comprises mRNA.

27. (Amended) The method of any one of claims ~~23~~ 55-57, 60, and 63 wherein the DNA that is detected comprises genomic DNA selected from the group consisting of genomic DNA comprising a genomic mutation, genomic DNA comprising a gene that has undergone amplification, genomic DNA comprising a gene that has undergone loss of heterozygosity, genomic DNA comprising a translocated gene and genomic DNA comprising a gene polymorphism.

28. (Amended) The method of any one of claims ~~23~~ 55-57, 60, and 63 wherein at least one nucleic acid that is detected comprises DNA, said DNA comprising genomic DNA selected from the group consisting of (i) the second cancer-specific nucleic acid and (ii) a cancer-associated nucleic acid that is present in at least one cancer cell ~~removed from the plurality of cells and that is absent from any non-cancer cells of the plurality of cells~~ in the second fraction.

29. (Amended) The method of any one of claims ~~23~~–55-57, 60, and 63 wherein the DNA is genomic DNA that comprises all or a portion of an oncogene.

30. (Amended) The method of any one of claims ~~23~~–55-57, 60, and 63 wherein the DNA is genomic DNA that comprises all or a portion of a tumor suppressor gene.

32. (Amended) The method of any one of claims ~~18-20~~41-43 wherein at least one nucleic acid selected from the group consisting of a (i) first cancer-specific nucleic acid; (ii) a second cancer-specific nucleic acid; (iii) a first cancer-associated nucleic acid; and (iv) a second cancer-associated nucleic acid comprises a coding portion of a gene selected from the group consisting of a tissue-specific gene, a metastasis-associated gene, a steroid hormone receptor gene, a drug resistance gene, an immunomodulation gene, a cell proliferation gene and an apoptosis gene, or a complementary nucleic acid thereto.

37. (Amended) The method of any one of claims ~~18-20~~41-43, 58, and 62 wherein the cancer cell is removed from the ~~plurality of cells~~body fluid by a method selected from the group consisting of microfiltration, density gradient centrifugation and antigen-specific immunoadsorption.

41. (New) A method for determining a risk for or presence of a disseminated cancer cell or a micrometastasizing cancer cell in a body fluid from a subject, comprising:

(a) dividing a plurality of cells into at least a first fraction and a second fraction, wherein each of the fractions comprises at least one cell and wherein the plurality of cells is from a body fluid of a subject known to have or suspected of being at risk for having a disseminated cancer cell or a micrometastasized cancer cell, and wherein the second fraction comprises at least one cell that has been removed from said body fluid according to a method for removing cancer cells;

(b) detecting in the first fraction an absence or presence of at least one first nucleic acid selected from the group consisting of a first cancer-specific nucleic acid and a first cancer-associated nucleic acid; and

(c) detecting, in the second fraction, an absence or presence of at least one second nucleic acid selected from the group consisting of a second cancer-specific nucleic acid and a second cancer-associated nucleic acid, wherein said first and second cancer-specific nucleic acids are different, wherein said first and second cancer-associated nucleic acids are different, wherein an increased presence of said first nucleic acid in the first fraction relative to the presence or absence of said first nucleic acid in a non-cancer cell from the subject and an increased presence of the second nucleic acid in said second fraction relative to the presence or absence of said second nucleic acid in a non-cancer cell from the subject indicate an increased risk for having a disseminated cancer cell or a micrometastasized cancer cell, and wherein a decreased presence of said first nucleic acid in the first fraction relative to the presence or absence of said first nucleic acid in a non-cancer cell from the subject and a decreased presence of the second nucleic acid in said second fraction relative to the presence or absence of said second nucleic acid in a non-cancer cell from the subject indicate a decreased risk for having a disseminated cancer cell or a micrometastasized cancer cell.

42. (New) A method for determining a risk for or presence of a disseminated cancer cell or a micrometastasizing cancer cell in a body fluid from a subject, comprising:

(a) dividing a plurality of cells into at least a first fraction and a second fraction, wherein each of the fractions comprises at least one cell and wherein the plurality of cells is from a body fluid of a subject known to have or suspected of being at risk for having a disseminated cancer cell or a micrometastasized cancer cell, and wherein the second fraction comprises at least one cell that has been removed from said body fluid according to a method for removing cancer cells;

(b) detecting in the first fraction an absence or presence of at least one first cancer-specific nucleic acid; and

(c) detecting in the second fraction an absence or presence of at least one second cancer-specific nucleic acid, wherein said first and second cancer-specific nucleic acids are different, wherein an increased presence of said first cancer-specific nucleic acid relative to the presence or absence of said first cancer-specific nucleic acid in a non-cancer cell from the subject and an increased presence of said second cancer-specific nucleic acid in said second fraction

relative to the presence or absence of said second cancer-specific nucleic acid in a non-cancer cell from the subject indicate an increased risk for having a disseminated cancer cell or a micrometastasized cancer cell, and wherein a decreased presence of said first cancer-specific nucleic acid relative to the presence or absence of said first cancer-specific nucleic acid in a non-cancer cell from the subject and a decreased presence of said second cancer-specific nucleic acid in said second fraction relative to the presence or absence of said second cancer-specific nucleic acid in a non-cancer cell from the subject indicate a decreased risk for having a disseminated cancer cell or a micrometastasized cancer cell.

43. (New) A method for determining a risk for or presence of a disseminated cancer cell or a micrometastasizing cancer cell in a body fluid from a subject, comprising:

(a) dividing a plurality of cells into at least a first fraction and a second fraction, wherein each of the fractions comprises at least one cell and wherein the plurality of cells is from a body fluid of a subject known to have or suspected of being at risk for having a disseminated cancer cell or a micrometastasized cancer cell, and wherein the second fraction comprises at least one cell that has been removed from said body fluid according to a method for removing cancer cells;

(b) detecting in the first fraction an absence or presence of at least one first cancer-specific nucleic acid;

(c) detecting in the second fraction an absence or presence of at least one second cancer-specific nucleic acid; and

(d) detecting an absence or presence of at least one cancer-associated nucleic acid in at least one sample selected from the group consisting of (i) the first fraction and (ii) the second fraction, wherein an increased presence of said first cancer-specific nucleic acid in said first fraction relative to the presence or absence of said first cancer-specific nucleic acid in a non-cancer cell from the subject, wherein an increased presence of said second cancer-specific nucleic acid in said second fraction relative to the presence or absence of said second cancer-specific nucleic acid in a non-cancer cell from the subject, wherein an increased presence of said cancer-associated nucleic acid in said sample relative to the presence or absence of said cancer-associated nucleic acid in a non-cancer cell from the subject indicate an increased risk for having

a disseminated cancer cell or a micrometastasized cancer cell, and wherein a decreased presence of said first cancer-specific nucleic acid in said first fraction relative to the presence or absence of said first cancer-specific nucleic acid in a non-cancer cell from the subject, wherein a decreased presence of said second cancer-specific nucleic acid in said second fraction relative to the presence or absence of said second cancer-specific nucleic acid in a non-cancer cell from the subject, and wherein a decreased presence of said cancer-associated nucleic acid in said sample relative to the presence or absence of said cancer-associated nucleic acid in a non-cancer cell from the subject indicate a decreased risk for having a disseminated cancer cell or a micrometastasized cancer cell.

44. (New) The method of any one of claims 41-43 wherein a nucleic acid selected from the group consisting of (i) a first cancer-specific nucleic acid; (ii) a second cancer-specific nucleic acid; (iii) a first cancer-associated nucleic acid; and (iv) a second cancer-associated nucleic acid comprises an organotypical gene.

45. (New) The method of claim 44 wherein the nucleic acid encodes an organotypical marker.

46. (New) The method of any one of claims 41-43 wherein a nucleic acid selected from the group consisting of (i) a first cancer-specific nucleic acid; (ii) a second cancer-specific nucleic acid; (iii) a first cancer-associated nucleic acid; and (iv) a second cancer-associated nucleic acid comprises a metastasis-associated gene.

47. (New) The method of claim 46 wherein the metastasis-associated gene encodes a gene product selected from the group consisting of an angiogenesis factor, a motility factor, a growth factor, a matrix degradation factor and an adhesion factor.

48. (New) The method of claim 47 wherein the matrix degradation factor is selected from the group consisting of a proteinase and a proteinase inhibitor.

49. (New) The method of claim 47 wherein the adhesion factor is an adherin.

50. (New) The method of claim 46 wherein the nucleic acid is selected from the group consisting of DNA and RNA.

51. (New) The method of claim 50 wherein the RNA comprises mRNA.

52. (New) The method of claim 51 wherein the mRNA encodes a gene product selected from the group consisting of bFGF, bFGF-R, VEGF, VEGF-R1, VEGF-R2, MMP2 and TIMP3.

53. (New) The method according to any one of claims 41-42 wherein steps (a) - (c) are performed before and after administering a candidate anticancer therapy to a subject known to have or suspected of being at risk for having a disseminated cancer cell or a micrometastasized cancer cell.

54. (New) The method according to claim 43 wherein steps (a) - (d) are performed before and after administering a candidate anticancer therapy to a subject known to have or suspected of being at risk for having a disseminated cancer cell or a micrometastasized cancer cell.

55. (New) The method of claim 41 wherein the first nucleic acid is selected from the group consisting of DNA and RNA and wherein the second nucleic acid is selected from the group consisting of DNA and RNA.

56. (New) The method of claim 42 wherein the first cancer-specific nucleic acid is selected from the group consisting of DNA and RNA and wherein the second cancer-specific nucleic acid is selected from the group consisting of DNA and RNA.

57. (New) The method of claim 43 wherein the first cancer-specific nucleic acid is selected from the group consisting of DNA and RNA, wherein the second cancer-specific nucleic acid is selected from the group consisting of DNA and RNA, and wherein the cancer-associated nucleic acid is selected from the group consisting of DNA and RNA.

58. (New) A method of typing a malignant disease in a subject known to have, or suspected of being at risk for having, a malignant disease, comprising:

(a) dividing a plurality of cells into at least a first fraction and a second fraction, wherein each of the fractions comprises at least one cell and wherein the plurality of cells is from a body fluid of the subject, and wherein the second fraction comprises at least one cell that has been removed from said body fluid according to a method for removing cancer cells;

(b) detecting in the first fraction an absence or presence of at least one first nucleic acid selected from the group consisting of a first cancer-specific nucleic acid and a first cancer-associated nucleic acid; and

(c) detecting in the second fraction an absence or presence of at least one second nucleic acid selected from the group consisting of a second cancer-specific nucleic acid and a second cancer-associated nucleic acid, wherein said first and second cancer-specific nucleic acids are different, wherein said first and second cancer-associated nucleic acids are different, wherein at least one of said first and second nucleic acids comprises an organotypical gene, and wherein an increased presence of at least one of said first and second nucleic acids comprising an organotypical gene relative to the presence or absence of at least one of said first and second nucleic acids comprising an organotypical gene in a non-cancer cell from the subject indicates the type of malignant disease from which the cancer cell is derived.

59. (New) The method of claim 58 wherein the organotypical gene encodes an organotypical marker.

60. (New) The method of claim 58 wherein the first nucleic acid is selected from the group consisting of DNA and RNA and wherein the second nucleic acid is selected from the group consisting of DNA and RNA.

61. (New) The method of claim 60 wherein the RNA comprises mRNA.

62. (New) A method for determining that a disseminated cancer cell has the ability to metastasize, comprising:

(a) dividing a plurality of cells into at least a first fraction and a second fraction, wherein each of the fractions comprises at least one cell and wherein the plurality of cells is from a body fluid of a subject known to have or suspected of being at risk for having a disseminated cancer cell or a micrometastasized cancer cell, and wherein the second fraction comprises at least one cell that has been removed from said body fluid according to a method for removing cancer cells;

(b) detecting in the first fraction an absence or presence of at least one first nucleic acid selected from the group consisting of a first cancer-specific nucleic acid and a first cancer-associated nucleic acid; and

(c) detecting in the second fraction an absence or presence of at least one second nucleic acid selected from the group consisting of a second cancer-specific nucleic acid and a second cancer-associated nucleic acid, wherein said first and second cancer-specific nucleic acids are different, wherein said first and second cancer-associated nucleic acids are different, wherein at least one of said first and second nucleic acids comprises a coding portion of a metastasis-associated gene, wherein an increased presence of said first and second nucleic acids in said cancer cell relative to the presence or absence of said first and second nucleic acids in a non-cancer cell from the subject indicates an increased risk that a disseminated cancer cell has the ability to metastasize, and wherein a decreased presence of said first and second nucleic acids in said cancer cell relative to the presence or absence of said first and second nucleic acids in a non-cancer cell from the subject indicates a decreased risk that a disseminated cancer cell has the ability to metastasize.

63. (New) The method of claim 62 wherein the first nucleic acid is selected from the group consisting of DNA and RNA and wherein the second nucleic acid is selected from the group consisting of DNA and RNA.

64. (New) The method of claim 63 wherein the RNA comprises mRNA.

65. (New) The method of claim 64 wherein the mRNA encodes a gene product selected from the group consisting of bFGF, bFGF-R, VEGF, VEGF-R1, VEGF-R2, MMP2 and TIMP3.

66. (New) The method of claim 62 wherein the metastasis-associated gene encodes a gene product selected from the group consisting of an angiogenesis factor, a motility factor, a growth factor, a matrix degradation factor and an adhesion factor.

67. (New) The method of claim 66 wherein the matrix degradation factor is selected from the group consisting of a proteinase and a proteinase inhibitor.

68. (New) The method of claim 66 wherein the adhesion factor is an adherin.

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APPENDIX: COMPLETE CLAIMS ACCORDING TO PRESENT AMENDMENT

21. (Amended) The method of claim 43 wherein the first and second cancer-specific nucleic acids are the same.

22. (Amended) The method of claim 43 wherein the first and second cancer-specific nucleic acids are different.

24. (Amended) The method of any one of claims 55-57 wherein the RNA comprises mRNA.

25. (New) The method of claim 24 wherein the mRNA is not expressed in the non-cancer cell.

26. (New) The method of claim 25 wherein the mRNA comprises all or a portion of a transcript of a gene selected from the group consisting of a CEA gene, a CK20 gene, a MUC1 gene, a tyrosinase gene and a MAGE3 gene.

27. (Amended) The method of any one of claims 55-57, 60, and 63 wherein the DNA that is detected comprises genomic DNA selected from the group consisting of genomic DNA comprising a genomic mutation, genomic DNA comprising a gene that has undergone amplification, genomic DNA comprising a gene that has undergone loss of heterozygosity, genomic DNA comprising a translocated gene and genomic DNA comprising a gene polymorphism.

28. (Amended) The method of any one of claims 55-57, 60, and 63 wherein at least one nucleic acid that is detected comprises DNA, said DNA comprising genomic DNA selected from the group consisting of (i) the second cancer-specific nucleic acid and (ii) a cancer-associated nucleic acid that is present in at least one cancer cell in the second fraction.

29. (Amended) The method of any one of claims 55-57, 60, and 63 wherein the DNA is genomic DNA that comprises all or a portion of an oncogene.

30. (Amended) The method of any one of claims 55-57, 60, and 63 wherein the DNA is genomic DNA that comprises all or a portion of a tumor suppressor gene.

31. The method of claim 27 wherein the genomic DNA comprises all or a portion of a gene selected from the group consisting of a p53 gene, an erb-B2 gene, a c-myc gene, a K-ras gene, an RB gene, an APC gene and a DCC gene.

32. (Amended) The method of any one of claims 41-43 wherein at least one nucleic acid selected from the group consisting of a (i) first cancer-specific nucleic acid; (ii) a second cancer-specific nucleic acid; (iii) a first cancer-associated nucleic acid; and (iv) a second cancer-associated nucleic acid comprises a coding portion of a gene selected from the group consisting of a tissue-specific gene, a metastasis-associated gene, a steroid hormone receptor gene, a drug resistance gene, an immunomodulation gene, a cell proliferation gene and an apoptosis gene, or a complementary nucleic acid thereto.

33. (New) The method of claim 32 wherein the metastasis-associated gene encodes a gene product selected from the group consisting of an angiogenesis factor, a motility factor, a growth factor, a matrix degradation factor and an adhesion factor.

34. (New) The method of claim 33 wherein the matrix degradation factor is selected from the group consisting of a proteinase and a proteinase inhibitor.

35. (New) The method of claim 33 wherein the adhesion factor is an adherin.

36. (New) The method of claim 24 wherein the mRNA encodes a gene product selected from the group consisting of bFGF, bFGF-R, VEGF, VEGF-R1, VEGF-R2, MMP2 and TIMP3.

37. (Amended) The method of any one of claims 41-43, 58, and 62 wherein the cancer cell is removed from the body fluid by a method selected from the group consisting of microfiltration, density gradient centrifugation and antigen-specific immunoadsorption.

41. (New) A method for determining a risk for or presence of a disseminated cancer cell or a micrometastasizing cancer cell in a body fluid from a subject, comprising:

(a) dividing a plurality of cells into at least a first fraction and a second fraction, wherein each of the fractions comprises at least one cell and wherein the plurality of cells is from a body fluid of a subject known to have or suspected of being at risk for having a disseminated cancer cell or a micrometastasized cancer cell, and wherein the second fraction comprises at least one cell that has been removed from said body fluid according to a method for removing cancer cells;

(b) detecting in the first fraction an absence or presence of at least one first nucleic acid selected from the group consisting of a first cancer-specific nucleic acid and a first cancer-associated nucleic acid; and

(c) detecting, in the second fraction, an absence or presence of at least one second nucleic acid selected from the group consisting of a second cancer-specific nucleic acid and a second cancer-associated nucleic acid, wherein said first and second cancer-specific nucleic acids are different, wherein said first and second cancer-associated nucleic acids are different, wherein an increased presence of said first nucleic acid in the first fraction relative to the presence or absence of said first nucleic acid in a non-cancer cell from the subject and an increased presence of the second nucleic acid in said second fraction relative to the presence or absence of said second nucleic acid in a non-cancer cell from the subject indicate an increased risk for having a disseminated cancer cell or a micrometastasized cancer cell, and wherein a decreased presence of said first nucleic acid in the first fraction relative to the presence or absence of said first nucleic acid in a non-cancer cell from the subject and a decreased presence of the second nucleic acid in said second fraction relative to the presence or absence of said second nucleic acid in a non-cancer cell from the subject indicate a decreased risk for having a disseminated cancer cell or a micrometastasized cancer cell.

42. (New) A method for determining a risk for or presence of a disseminated cancer cell or a micrometastasizing cancer cell in a body fluid from a subject, comprising:

(a) dividing a plurality of cells into at least a first fraction and a second fraction, wherein each of the fractions comprises at least one cell and wherein the plurality of cells is from a body fluid of a subject known to have or suspected of being at risk for having a disseminated cancer cell or a micrometastasized cancer cell, and wherein the second fraction comprises at least one cell that has been removed from said body fluid according to a method for removing cancer cells;

(b) detecting in the first fraction an absence or presence of at least one first cancer-specific nucleic acid; and

(c) detecting in the second fraction an absence or presence of at least one second cancer-specific nucleic acid, wherein said first and second cancer-specific nucleic acids are different, wherein an increased presence of said first cancer-specific nucleic acid relative to the presence or absence of said first cancer-specific nucleic acid in a non-cancer cell from the subject and an increased presence of said second cancer-specific nucleic acid in said second fraction relative to the presence or absence of said second cancer-specific nucleic acid in a non-cancer cell from the subject indicate an increased risk for having a disseminated cancer cell or a micrometastasized cancer cell, and wherein a decreased presence of said first cancer-specific nucleic acid relative to the presence or absence of said first cancer-specific nucleic acid in a non-cancer cell from the subject and a decreased presence of said second cancer-specific nucleic acid in said second fraction relative to the presence or absence of said second cancer-specific nucleic acid in a non-cancer cell from the subject indicate a decreased risk for having a disseminated cancer cell or a micrometastasized cancer cell.

43. (New) A method for determining a risk for or presence of a disseminated cancer cell or a micrometastasizing cancer cell in a body fluid from a subject, comprising:

(a) dividing a plurality of cells into at least a first fraction and a second fraction, wherein each of the fractions comprises at least one cell and wherein the plurality of cells is from a body fluid of a subject known to have or suspected of being at risk for having a disseminated

cancer cell or a micrometastasized cancer cell, and wherein the second fraction comprises at least one cell that has been removed from said body fluid according to a method for removing cancer cells;

(b) detecting in the first fraction an absence or presence of at least one first cancer-specific nucleic acid;

(c) detecting in the second fraction an absence or presence of at least one second cancer-specific nucleic acid; and

(d) detecting an absence or presence of at least one cancer-associated nucleic acid in at least one sample selected from the group consisting of (i) the first fraction and (ii) the second fraction, wherein an increased presence of said first cancer-specific nucleic acid in said first fraction relative to the presence or absence of said first cancer-specific nucleic acid in a non-cancer cell from the subject, wherein an increased presence of said second cancer-specific nucleic acid in said second fraction relative to the presence or absence of said second cancer-specific nucleic acid in a non-cancer cell from the subject, wherein an increased presence of said cancer-associated nucleic acid in said sample relative to the presence or absence of said cancer-associated nucleic acid in a non-cancer cell from the subject indicate an increased risk for having a disseminated cancer cell or a micrometastasized cancer cell, and wherein a decreased presence of said first cancer-specific nucleic acid in said first fraction relative to the presence or absence of said first cancer-specific nucleic acid in a non-cancer cell from the subject, wherein a decreased presence of said second cancer-specific nucleic acid in said second fraction relative to the presence or absence of said second cancer-specific nucleic acid in a non-cancer cell from the subject, and wherein a decreased presence of said cancer-associated nucleic acid in said sample relative to the presence or absence of said cancer-associated nucleic acid in a non-cancer cell from the subject indicate a decreased risk for having a disseminated cancer cell or a micrometastasized cancer cell.

44. (New) The method of any one of claims 41-43 wherein a nucleic acid selected from the group consisting of (i) a first cancer-specific nucleic acid; (ii) a second cancer-specific nucleic acid; (iii) a first cancer-associated nucleic acid; and (iv) a second cancer-associated nucleic acid comprises an organotypical gene.

45. (New) The method of claim 44 wherein the nucleic acid encodes an organotypical marker.

46. (New) The method of any one of claims 41-43 wherein a nucleic acid selected from the group consisting of (i) a first cancer-specific nucleic acid; (ii) a second cancer-specific nucleic acid; (iii) a first cancer-associated nucleic acid; and (iv) a second cancer-associated nucleic acid comprises a metastasis-associated gene.

47. (New) The method of claim 46 wherein the metastasis-associated gene encodes a gene product selected from the group consisting of an angiogenesis factor, a motility factor, a growth factor, a matrix degradation factor and an adhesion factor.

48. (New) The method of claim 47 wherein the matrix degradation factor is selected from the group consisting of a proteinase and a proteinase inhibitor.

49. (New) The method of claim 47 wherein the adhesion factor is an adherin.

50. (New) The method of claim 46 wherein the nucleic acid is selected from the group consisting of DNA and RNA.

51. (New) The method of claim 50 wherein the RNA comprises mRNA.

52. (New) The method of claim 51 wherein the mRNA encodes a gene product selected from the group consisting of bFGF, bFGF-R, VEGF, VEGF-R1, VEGF-R2, MMP2 and TIMP3.

53. (New) The method according to any one of claims 41-42 wherein steps (a) - (c) are performed before and after administering a candidate anticancer therapy to a subject

known to have or suspected of being at risk for having a disseminated cancer cell or a micrometastasized cancer cell.

54. (New) The method according to claim 43 wherein steps (a) - (d) are performed before and after administering a candidate anticancer therapy to a subject known to have or suspected of being at risk for having a disseminated cancer cell or a micrometastasized cancer cell.

55. (New) The method of claim 41 wherein the first nucleic acid is selected from the group consisting of DNA and RNA and wherein the second nucleic acid is selected from the group consisting of DNA and RNA.

56. (New) The method of claim 42 wherein the first cancer-specific nucleic acid is selected from the group consisting of DNA and RNA and wherein the second cancer-specific nucleic acid is selected from the group consisting of DNA and RNA.

57. (New) The method of claim 43 wherein the first cancer-specific nucleic acid is selected from the group consisting of DNA and RNA, wherein the second cancer-specific nucleic acid is selected from the group consisting of DNA and RNA, and wherein the cancer-associated nucleic acid is selected from the group consisting of DNA and RNA.

58. (New) A method of typing a malignant disease in a subject known to have, or suspected of being at risk for having, a malignant disease, comprising:

(a) dividing a plurality of cells into at least a first fraction and a second fraction, wherein each of the fractions comprises at least one cell and wherein the plurality of cells is from a body fluid of the subject, and wherein the second fraction comprises at least one cell that has been removed from said body fluid according to a method for removing cancer cells;

(b) detecting in the first fraction an absence or presence of at least one first nucleic acid selected from the group consisting of a first cancer-specific nucleic acid and a first cancer-associated nucleic acid; and

(c) detecting in the second fraction an absence or presence of at least one second nucleic acid selected from the group consisting of a second cancer-specific nucleic acid and a second cancer-associated nucleic acid, wherein said first and second cancer-specific nucleic acids are different, wherein said first and second cancer-associated nucleic acids are different, wherein at least one of said first and second nucleic acids comprises an organotypical gene, and wherein an increased presence of at least one of said first and second nucleic acids comprising an organotypical gene relative to the presence or absence of at least one of said first and second nucleic acids comprising an organotypical gene in a non-cancer cell from the subject indicates the type of malignant disease from which the cancer cell is derived.

59. (New) The method of claim 58 wherein the organotypical gene encodes an organotypical marker.

60. (New) The method of claim 58 wherein the first nucleic acid is selected from the group consisting of DNA and RNA and wherein the second nucleic acid is selected from the group consisting of DNA and RNA.

61. (New) The method of claim 60 wherein the RNA comprises mRNA.

62. (New) A method for determining that a disseminated cancer cell has the ability to metastasize, comprising:

(a) dividing a plurality of cells into at least a first fraction and a second fraction, wherein each of the fractions comprises at least one cell and wherein the plurality of cells is from a body fluid of a subject known to have or suspected of being at risk for having a disseminated cancer cell or a micrometastasized cancer cell, and wherein the second fraction comprises at least one cell that has been removed from said body fluid according to a method for removing cancer cells;

(b) detecting in the first fraction an absence or presence of at least one first nucleic acid selected from the group consisting of a first cancer-specific nucleic acid and a first cancer-associated nucleic acid; and

(c) detecting in the second fraction an absence or presence of at least one second nucleic acid selected from the group consisting of a second cancer-specific nucleic acid and a second cancer-associated nucleic acid, wherein said first and second cancer-specific nucleic acids are different, wherein said first and second cancer-associated nucleic acids are different, wherein at least one of said first and second nucleic acids comprises a coding portion of a metastasis-associated gene, wherein an increased presence of said first and second nucleic acids in said cancer cell relative to the presence or absence of said first and second nucleic acids in a non-cancer cell from the subject indicates an increased risk that a disseminated cancer cell has the ability to metastasize, and wherein a decreased presence of said first and second nucleic acids in said cancer cell relative to the presence or absence of said first and second nucleic acids in a non-cancer cell from the subject indicates a decreased risk that a disseminated cancer cell has the ability to metastasize.

63. (New) The method of claim 62 wherein the first nucleic acid is selected from the group consisting of DNA and RNA and wherein the second nucleic acid is selected from the group consisting of DNA and RNA.

64. (New) The method of claim 63 wherein the RNA comprises mRNA.

65. (New) The method of claim 64 wherein the mRNA encodes a gene product selected from the group consisting of bFGF, bFGF-R, VEGF, VEGF-R1, VEGF-R2, MMP2 and TIMP3.

66. (New) The method of claim 62 wherein the metastasis-associated gene encodes a gene product selected from the group consisting of an angiogenesis factor, a motility factor, a growth factor, a matrix degradation factor and an adhesion factor.

67. (New) The method of claim 66 wherein the matrix degradation factor is selected from the group consisting of a proteinase and a proteinase inhibitor.

68. (New) The method of claim 66 wherein the adhesion factor is an adherin.